

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (CURRENTLY AMENDED) A tissue scaffold which comprises a matrix having a porous structure, the matrix comprising a first phase and a second phase, wherein the first phase is comprising a solid or semi solid first phase and, wherein the second phase is contained within and distributed through the first phase, ~~a second phase which optionally additionally contains cells, and wherein the matrix has a porous structure.~~
2. (ORIGINAL) A tissue scaffold according to claim 1, wherein the second phase is solid.
3. (ORIGINAL) A tissue scaffold according to claim 2, wherein the second phase comprises a solid particle material contained within and distributed through the first phase.
4. (ORIGINAL) A tissue scaffold according to claim 3, wherein the solid particulate material is porous.
5. (CURRENTLY AMENDED) A tissue scaffold according to claim 1 wherein the first phase or the second phase or both the first phase and the second phase comprises one or more of the polymers selected from poly (α -hydroxyacids ~~or hydroxyacids~~), polylactic acids or polyglycolic acids, poly-lactide poly-glycolide copolymers, poly-lactide polyethylene glycol (PEG) copolymers, polyesters, poly (ϵ -caprolactone ~~or caprolactone~~), poly (3-hydroxy-butyrates), poly (s-caproic acid), poly (p-dioxanone), poly (propylene fumarate), poly (ortho esters), polyol/diketene acetals addition polymers,

polyanhydrides, poly (sebacic anhydride) (PSA), poly (carboxybiscarboxyphenoxyphenoxyhexane) (PCPP), poly [bis(p- γ -carboxyphenoxy) methane] (PCPM), copolymers of SA, CPP and CPM poly (amino acids), poly (pseudo amino acids), polyphosphazenes, derivatives of poly [(dichloro) phosphazene], poly [(organo) phosphazenes] polymers, polyphosphates, polyethylene glycol polypropylene block copolymers, natural polymers, silk, elastin, chitin, chitosan, fibrin, fibrinogen, polysaccharides (including pectins), alginates, collagen, poly (amino acids), peptides, polypeptides, proteins, or mixtures thereof ~~or proteins, co-polymers prepared from the monomers of these polymers random blends of these polymers or mixtures or combinations thereof.~~

6. (ORIGINAL) A tissue scaffold according to claim 5, wherein the polymer is biodegradable.
7. (ORIGINAL) A tissue scaffold according to claim 5, wherein the polymer is crosslinked.
8. (CURRENTLY AMENDED) A tissue scaffold according to claim 5, wherein the first phase or the second phase or both the first phase and the second phase comprises the a polymer and a plasticizer.
9. (ORIGINAL) A tissue scaffold according to claim 1, which additionally contains cells.
10. (ORIGINAL) A tissue scaffold according to claim 9, wherein the cells are provided in the second phase.
11. (ORIGINAL) A tissue scaffold according to claim 9, in which the cells are animal cells.

12. (ORIGINAL) A tissue scaffold according to claim 11, in which the cells are mammalian cells.

13. (ORIGINAL) A tissue scaffold according to claim 11, in which the cells are human cells.

14. (CURRENTLY AMENDED) A tissue scaffold according to claim 11, in which the cells are bone cells, osteoprogenitor cells, cardiovascular cells, endothelial cells, lung cells, cardiomyocyte cells ~~cardiomyocytes~~, pulmonary ~~or other lung~~ cells, gut or intestinal cells, cartilage cells, muscle cells, liver cells, kidney cells, skin cells, or specialised cells such as placental cells, amnionic cells, chorionic cells or foetal cells, stem cells, chondrocyte cells ~~chondrocytes~~, or ~~reprogrammed cells from other parts of the body such as~~ adipocytes reprogrammed to become cartilage cells.

15. (ORIGINAL) A tissue scaffold according to claim 1, in which the matrix further comprises one or more factors useful for the promotion of tissue growth and development.

16. (CURRENTLY AMENDED) A tissue scaffold according to claim 15, wherein the factors in the matrix comprise one or more factors selected from: epidermal growth factor, platelet derived growth factor, basic fibroblast growth factor, vascular endothelial growth factor, insulin-like growth factor, nerve growth factor, hepatocyte growth factor, transforming growth factors, ~~and~~ bone morphogenic proteins, cytokines, ~~including~~ interferons, interleukins, monocyte chemotactic protein-1(MCP-1), oestrogen, testosterone, kinases, chemokines, glucose, ~~or other~~ sugars, amino acids, calcification factors, dopamine, amine-rich oligopeptides, ~~such as heparin-binding domains found in adhesion proteins such as~~ fibronectin, ~~and~~ laminin, other amines tamoxifen, cis-platin, and peptides ~~and certain toxoids~~.

17. (CURRENTLY AMENDED) A tissue scaffold according to claim 1, in which the matrix further comprises drugs, hormones, enzymes, antibiotics, nutrients ~~or other therapeutic agents or factors~~ or mixtures thereof in both the first phase and the second phase.

18. (CURRENTLY AMENDED) A tissue scaffold according to claim 1, in which each of the first phase and the second phase of the matrix comprises different drugs, hormones, enzymes, antibiotics, nutrients ~~or other therapeutic agents or factors~~ or mixtures thereof.

19. – 33. (cancelled)

34. (NEW) A solidifiable matrix comprising a first phase in a fluid state and a second phase distributed through the first phase, wherein the solidifiable matrix is suitable for introduction into a tissue prior to solidification of the first phase to form a porous matrix, wherein the term fluid defines any substance which flows and therefore includes liquids, gases, and solids which are able to flow and to conform to the outline of their container.